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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,998	03/23/2001	Hirofumi Taketsu	2204-002012	1204

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11/06/2003

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EXAMINER

BLOUNT, STEVEN

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 11/06/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/287,998

Applicant(s)

Taketsu et al

Examiner

Blount

Group Art Unit

2661

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 10/16/03
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1, 4-7, 9-10 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1, 4-7, 9-10 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Art Unit: 2661

DETAILED ACTION

1. A request for continued examination under 37 CAR 1.114, including the fee set forth in 37 CAR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CAR 1.114, and the fee set forth in 37 CAR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CAR 1.114. Applicant's submission filed on 10/16/03 has been entered.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4 - 7, and 9 are rejected under 35 U.S.C. 103(a) as being obvious over applicants admitted prior art (hereinafter referred to as AAPA) in view of U.S. patent 6,009,913 to Kojima et al.

With regard to claim 1, AAPA teaches, in the section labeled "Prior Art", page 2, lines 17 - page 3, lines 1 - 3 of the specification, that, "an *Al-coated steel sheet* to which an organic resin film is applied (hereinafter referred to as "an anti-corrosion painted steel sheet", as disclosed in JP-306637A, JP9-53166A) is proposed as a material for a *fuel tank* in order to eliminate the above mentioned problems...(beginning at line 28)...However, an Al plating layer formed on the

Art Unit: 2661

steel sheet is inferior of anti-scratching property during press-working, so that substrate steel is often partially exposed to the outside when it is press-worked to upper and lower halves 2, 3" (emphasis added).

Therefore, AAPA does not teach a coating which is, as stated, capable of protecting the fuel tank from scratches during its formation; nor does AAPA teach a coating which would be easily removable after the forming process.

Kojima et al teaches (col 6, lines 1+) that "when a resin coating is to be removed after hydroforming, a removable resin coating is used, a preferred removable coating is thermoplastic type and, *soluble in an alkali aqueous solution*" (emphasis added). Kojima also discloses the problem of scratching the material by the dies (again during a steel forming operation) which occurs during the high pressures encountered with hydroforming. See col 2 lines 27+ and col 3 lines 62+ which discuss a solution to this problem through the use of a "lubricating organic resin coating", wherein the resin coating is "*soluble in an alkali aqueous solution*" (col 6, lines 3 - 4 and col 14, paragraph 2). Kojima also teaches a carboxyl group with an acid value of 10 to 160. See col 6, lines 19+. Kojima also teaches that the resin, in one embodiment, is removable. See col 5, last sentence; column 6 lines 1+; column 7 lines 5+; col 7 lines 55+; col 4 lines 43+, and col 14 lines 1+. While Kojima does not explicitly teach the resin film to be soluble in an alkali liquid of PH 9.0 or higher, one of ordinary skill in the art would recognize that this is a typical (and wide) range of alkalinity values one would use to create conditions which would allow the resin to be subsequently dissolved and removed from the fuel tank, and its value is strongly

Art Unit: 2661

suggested by the choice of acid value. (Note this dependence of solubility on acid value is discussed in col 6, lines 22+: "An acid value of less than 10 associated with the carboxyl groups causes a resin coating to become less soluble in an aqueous alkali solution, whereas an acid value in excess of 160 impairs the water resistance of a resin coating").

It would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the alkali soluble organic resin film directly to the aluminum coated steel sheet-formed fuel tank in AAPA (and taught in 9142466, as mentioned in AAPA), in light of the teachings of Kojima, in order to protect the surface of the fuel tank from scratching during its formation by using a coating which can thereafter be easily removed.

With regard to claim 5, see table 2 of K, which discusses the use of urethane.

With regard to claim 6, see page 3, lines 27+ of AAPA. See also col 5, lines 63+ of Kojima.

With regard to claim 7, see the various coating thicknesses in table 2 of K.

With regard to claim 9, the use of polyacrylic homopolymers is taught in col 6, lines 27+ of K.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over applicants admitted prior art (AAPA) in view of U.S. patent 6,009,913 to Kojima et al as applied to claim 1 above, and further in view of Japanese patent 410265967 to Teruaki et al.

Art Unit: 2661

AAPA/Kojima teach the invention as described above, but do not teach the use of 1 - 30% powdery silica. The use of silica is taught in Teruaki (2 - 13%), wherein a powdered form of it is commonly known. Further, the amount used in Teruaki is similar to that claimed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the resin film of AAPA/Kojima with a powdery silica (1 - 30%), in light of the teachings of Teruaki et al, in order to make the resin evenly applicable to the surface.

Response to Arguments

5. The applicant argues that Kojima fails to teach a “protective resin film” (page 5, lines 6+). In response, the examiner notes the problem of scratching (see col 4 lines 36+ and col 2 lines 27+) addressed by Kojima. The Tank formed by AAPA/Kojima has improved “durability and corrosion-resistance properties” to the same extent that applicants invention does, in that in AAPA/Kojima, the process is carried out “In order to prevent galling, scratches, buckling, cracking, and like problems in hydroforming” (col 4, lines 35+) (ie, on the surface of the metal material). Importantly, applicant argues (and has amended the claims accordingly) that Kojima does not teach removing a resin film “after press forming”. In response, the examiner initially refers the applicant to lines 13+, page 5 of the previous Office Action, and incorporates those arguments into this action by reference. Further, the examiner notes the following: “pressing” of various types is taught in col 1 lines 44+ of Kojima. Kojima is directed to “*Lubricant Surface-Treated Steel Pipe For Hydroforming Use*” (title, emphasis added) (note the treated material, and the fact applicant has claimed a product).

Art Unit: 2661

Importantly, Kojima teaches "In a step shown in Fig. 3B, opposed pushing blocks 4 and 5 attached to the horizontally *pressing apparatus* of a hydroforming machine (not shown) are advanced to *press* the end surfaces 4a and 5a thereof against the end surfaces 3a of the tubular blank 3." (Col 6, lines 50+, emphasis added). Hydroforming involves pressing the (tubular) walls of the material against the walls of the die (see col 1, lines 50+). The important aspect of "press forming" is that the material flows. See, for example, PMF FlowformingPlus (TM) and Press Forming (Peterson Manufacturing), newly cited, where drawing, flaring, and flow are mentioned. See also the definition of flow (Merriam Webster's Collegiate Dictionary, tenth edition, page 458: "1 a. To give a particular shape to: to shape or mold into a certain state or after a particular model". The examiner believes that when read fairly and broadly, especially in view of the above, hydroforming is an obvious variation of press forming in this context, and that one of ordinary skill in this art would certainly realize the desirability of using the protective coating taught in Kojima in the "press forming" process taught in AAPA as mentioned above. Kojima is cited for the use of a protective coating to be used, generally, in a *forming* process. The problems encountered in AAPA, particularly scratching (see pages 2 - 3 of AAPA: "However, an Al plating layer formed on the steel sheet is inferior of anti-scratching during press-working") find their solution in Kojima; see the anti-scratching property of the film in Kojima discussed above. As noted, AAPA teaches Al-coated steel. The examiner believes that the wt. % of si in Teruaki would suggest that claimed by applicant in claim 10. The examiner submits that the reference is in the same field as applicants invention, and that, additionally, "it would have commended itself

Art Unit: 2661

to an inventors attention in considering his problem." See in Re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-1061 (Fed. Cir. 1992).

Contact Information

6. Examiner Blount may be contacted at the Patent Office between the hours of 9:00 am to 5:30 P.M. Monday through Friday. His phone number is (703) 305-0319.



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10/30/03